



RISE

PROGRAM

@HUNTER
Fall 2013

From the Director

The Hunter College RISE (Research Initiative for Scientific Enhancement) Program has been funded by the National Institutes of Health (NIH) for approximately 25 years (previously as MBRIS Program). Its goal is to increase the number of scientists from underrepresented groups in biomedical research. Undergraduates (currently 11) and graduate students (currently 14 PhD and 4 MS) in Biology, Chemistry, Physics and Psychology receive salary, placement in a laboratory engaged in state of the art research, and mentoring from their advisors and program activities. Support is also given for traveling to national meetings to present research. Students spend one summer at research centers around NYC and the country.

I am so proud of our RISE students because they have excelled while at Hunter receiving numerous CUNY and national awards including Goldwater, Gates Millennium Scholarship and NSF fellowships. Among participating undergraduates, approximately 42 have received PhDs, and approximately 20 are currently enrolled in PhD programs at Columbia, Princeton, Harvard, Weill Cornell Medical College, CUNY, Carnegie-Mellon and Memorial Sloan Kettering, among others. Many recent graduate students are now post-doctoral fellows, and placements include Albert Einstein College of Medicine, Weill Cornell Medical College, NIDA, Univ. of Oregon Health Sciences, Mount Sinai School of Medicine, The Rockefeller University and the Graduate Center of CUNY. Some alumnae of the program are also faculty members at colleges and universities including Brooklyn, John Jay and Baruch Colleges of CUNY, Duke University (2), Rockefeller University, Morgan State University and Worcester College, among others.

I hope that you will enjoy reading about our program and its students. Please stop by our office at 314 HN and apply if you are an outstanding student interested in pursuing a career as a PhD in biomedical and behavioral research.

Sincerely,
Victoria N. Luine, Ph.D.
Dist. Prof. of CUNY
RISE Program Director



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Welcome to New Students and Staff



The RISE program welcomes our new Professional Development Coordinator, Dr. Christina Medina-Ramirez.

Dr. Medina-Ramirez' connection to Hunter College began in 2001 when she participated in the Summer Program for

Undergraduate Research (SPUR). Working in the lab of Dr. Jill Bargonetti that summer ignited her interest in the molecular biology of cancer and fortified her decision to pursue a doctorate degree. After graduating from St. Francis College with a B.S. in Biology, she began the Ph.D. program at Albert Einstein College of Medicine. Her thesis work as well as her Postdoctoral research at NYU Langone Medical Center focused on cell death mechanisms and therapies related to breast and glioblastoma brain cancers.

Throughout her scientific training, Dr. Medina-Ramirez remained committed to supporting underrepresented minorities in science. She was one of the founding members and co-chairs of the NYC-Minority Graduate Student Network and was continuously involved in mentoring programs for minority undergraduates in STEM. Her scholarly efforts and dedication to improving health disparities and diversity in STEM have been recognized by several awards including the Ford Foundation Predoctoral Diversity Fellowship, the AACR Minority Scholar in Cancer Research Award, and the Hispanic Center for Excellence-Future Leader in Science and Research Award.

In her role as the RISE Professional Development Coordinator, Dr. Medina-Ramirez is involved with the development of curriculums for the undergraduate, Introduction to Biomedical Research course, the Graduate Student Forum and the implementation of Individual Development Plans (IDPs). Additionally, Dr. Medina-Ramirez personally assists students with preparing documents for graduate school, summer programs, fellowships and job applications.

New RISE Scholars

Our program is happy to welcome a talented new cohort of RISE scholars. We look forward to nurturing their success as future leaders in science and research.

Undergraduates:

Name	Major	Mentor
Lauren Christopher	Psychology	Dr. Herman Pontzer
Laura Fonseca	Psychology	Dr. Douglas Mennin
Katherine Lopez	Psychology	Dr. Shirzad Jenab
Martha Ordoñez	Psychology/Neuroscience	Dr. Peter Serrano
Syed Sarder	Biochemistry	Dr. Frida Kleinman
Khalifa Stafford	Psychology	Dr. Herman Pontzer

Masters Students:

Name	Program	Mentor
Leandro Salina	Psychology	Dr. Victoria Luine
Ernesto Sandoval	Physics	Dr. Neepa Maitra

Doctoral Students:

Name	Program	Mentor
Jorge Avila	Biopsychology	Dr. Peter Serrano
Jorge Baquero	Chemistry	Dr. Frida Kleinman
Emmanuel Garcia	Clinical Psychology	Dr. Douglas Mennin
Prospero Lugo	Biology	Dr. Marie Filbin

RISE Students on the Rise

The RISE program is proud to announce our recent graduates, acceptances into PhD programs, new PhD candidates and doctorate degrees granted.

Winter 2013 Commencement

Dalila Ordoñez (mentored by Dr. Maria Figueiredo-Pereira and Dr. Jesus Angulo) graduated with BA in Psychology. Dalila was accepted into several Ivy League Graduate programs including the *Neuroscience PhD program at Harvard Medical School* which she is beginning this Fall.

Spring 2013 Commencement

Ivan J. Cohen (mentored by Dr. Jason DICTENBERG) received a BA/MA in biochemistry and has since begun graduate studies at the highly selective, *Gerstner Graduate School of Biomedical Sciences, Memorial Sloan-Kettering Cancer Center*.

Steven Cajamarca (mentored by Dr. Nancy Greenbaum), the commencement's Salutatorian, received a BA in Biochemistry. He gained admittance into the top-ranked Tri-Institutional MD/PhD program at Weill Cornell Medical College where he began this academic year.

The RISE program was honored to have the achievements of **Ivan** and **Steven** highlighted during the commencement ceremony by Hunter President, Jennifer Raab.

Eric Ramos (mentored by Dr. Diana Reiss) completed the Master's program in Animal Behavior and Conservation in the Psychology Department. His Master's thesis focused on the communication and behavior of wild bottlenose dolphin in Belize. Eric was awarded a prestigious 5 year *Magnet Fellowship* to continue his work with Dr. Reiss in the *CUNY Graduate Center Psychology Doctoral Program in Animal Behavior and Comparative Psychology*.

Advancement to PhD Candidacy

Congratulations to the following RISE graduate students who successfully defended their thesis research proposals during second level exams.

Saranna Belgrave, PhD Candidate in Biopsychology
Mentor: Dr. Victoria Luine
Proposal Title: *"Parity in aging: Neural basis for behavioral effects on memory and anxiety"*

Courtney Daly, PhD Candidate in Biopsychology
Mentor: Dr. Vanya Quinones-Jenab
Proposal Title: *"Sex differences in*

FosB Expression after administration of cocaine, methamphetamine, and cannabinoids"

Teneka Jean Louis (Evans), PhD Candidate in Biochemistry
Mentor: Dr. Maria Figueiredo-Pereira
Proposal Title: *"Uncovering the Proteasomal-Mitochondrial Link with Amyloid Precursor Protein: Relevance to Alzheimer Disease"*

Thesis Defenses

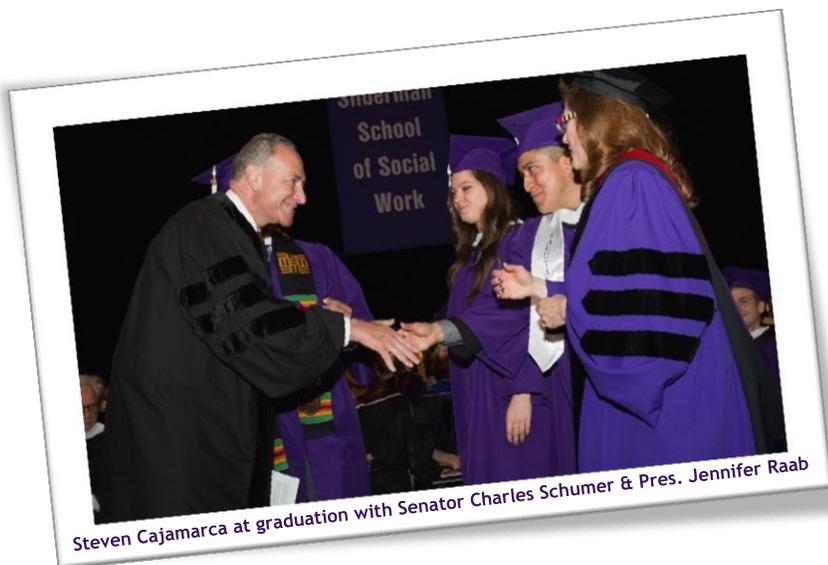
Bravo to the following RISE Graduate students who successfully defended their PhD dissertations.

Mario Benavides, PhD in Biology
Mentor: Dr. Hualin Zhong
Thesis Title: *"Microspherule protein Msp58 and ubiquitin ligase EDD form a stable complex that regulates cell proliferation"*

Yasmine Daniels, PhD in Chemistry
Mentor: Dr. Spiro Alexandratos
Thesis Title: *"Modification of Hydroxyapatite (HAP) with 1-hydroxyethane-1, 1-diphosphonic acid (HEDP) for the Selective Sorption of Metal Ions from Aqueous Effluents."*

Juan Gomez, PhD in Biopsychology
Mentor: Dr. Victoria Luine
Thesis Title: *"Interactive Effects of Chronic Stress and Alcohol Intake on Behavioral, Physiological, and Neuronal Components in Males and Females"*

Kai-Mosadi Monde, PhD in Biopsychology
Mentor: Dr. Victoria Luine
Thesis Title: *"Physiological Correlates of Emotion Regulation in Depersonalization Disorder"*



Steven Cajamarca at graduation with Senator Charles Schumer & Pres. Jennifer Raab

2013 Summer Undergraduate Research Internships

To supplement their experience in the RISE program, undergraduates are encouraged to apply for external summer research internships. In the summer of 2013, we had 5 students accepted into competitive programs at prestigious research institutions.



Franklin Lema

Aja Crim-Logan

Yale University

Summer Undergraduate Research Fellowship (SURF) Program

Mentor: Dr. Hedy Kober

Project Title: Computer Based Treatment for Cognitive Behavioral Therapy



Steven Hall

Steven Hall

Columbia University

Summer Program for Undergraduate Research (SPUR)

Mentor: Dr. Virginia W. Cornish

Project Title: Synthesis of Dexamethasone-Cellotetraose-Methotrexate for Chemical Complementation

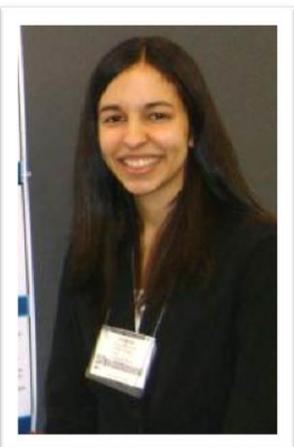
Franklin Lema

Albert Einstein College of Medicine

Summer Program for Undergraduate Research (SURP)

Mentor: Dr. Feliksas F. Bukauskas

Project Title: The Role of Cx43 Gap Junctions in Propagation of Cell Death



Victoria Quiñones

Elena Pires

Cornell University (Ithaca)

Molecular Biology and Genetics Research Program (MBG-REU)

Mentor: Dr. John C. Schimenti

Project Title: Exploring the Involvement of Checkpoint Genes on Male Fertility

Victoria Quiñones

Harvard University

Summer Research Opportunities at Harvard (SROH) Program

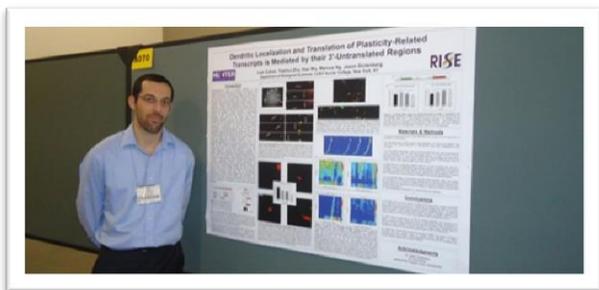
Mentors: Dr. Matthew Nock & Dr. George Alvarez

Project Title: The Role of Planning for Suicide

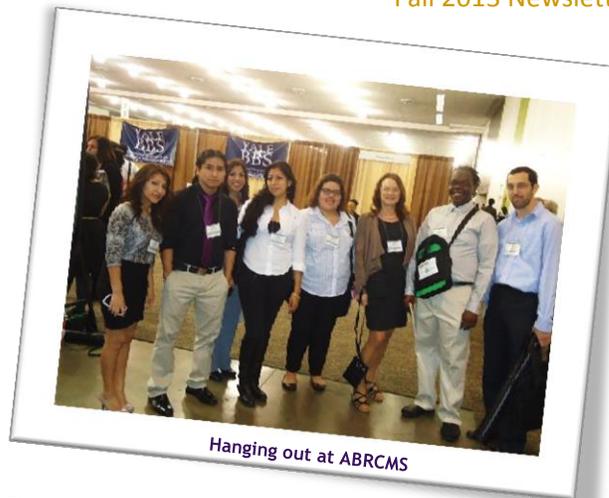
RISE at ABRCMS

The 2012 Annual Biomedical Research Conference for Minority Students (ABRCMS), held November 7-10 in San Jose, California, encourages underrepresented minority students to "pursue advanced training and degrees in the biomedical and behavior sciences."

Three out of the seven RISE undergraduates who presented posters of their original research received awards for excellence. Neuroscience students **Franklin Lema** (*Immuno-staining of Targeted Hippocampus CA2 Neurons*), **Ivan Cohen** (*Dendritic Localization and Translation of Plasticity-Related Transcripts is Mediated by their 3'-Untranslated Regions*), and biochemistry student **Steven Cajamarca** (*Role of the Leaky Neuronal Ryanodine Receptor in Alzheimer's Disease Pathology*) were each awarded poster-presentation awards; Mr. Cajamarca received an additional interdisciplinary award.



Ivan Cohen; winner of a poster presentation award in neuroscience



Hanging out at ABRCMS

The 2013 ABRCMS meeting will be held November 13-16 in Nashville, TN. All seven RISE undergraduate abstract submissions have been accepted! These include six for poster presentation and one for oral presentation by RISE senior **Victoria Quiñones**.

More information about this meeting can be found at www.abrcms.org.

Scholastic Achievements

Undergraduates

In addition to awards at given at 2012 ABRCMS, RISE undergraduates also were the recipients of the following awards during the 2012-2013 academic year.

Victoria Quiñones was the recipient of scholarships from the *New York League of Puerto Rican Women* and the *Hunter College Scholarship and Welfare Fund* in recognition of her academic excellence.

Laura Fonseca was awarded a lifetime membership in the *PSI CHI International Honor Society in Psychology* in recognition of outstanding scholastic achievement and excellence.

Khalifa Stafford was granted the *Michael D. Soloman Scholarship Award* which is awarded annually to a CUNY Student who has overcome tremendous obstacles in order to pursue their higher education.

Steven Hall received a *Certificate of Excellence* for his involvement and leadership in the *Black Male Initiative Program* at Hunter College.

Elena Pires was the recipient of the *Fannie Margolies Undergraduate Award* for the advancement of women in science from the department of Chemistry at Hunter College.

Scholastic Achievements (continued)

Graduate Students



Obehi Thompson Ukpebor

Physics graduate students **Obehi Thompson Ukpebor** (MS) and **Armando Rua** (PhD Candidate), mentored by Dr. Steve Greenbaum, were the recipients of Travel Awards to present at the *2013 Emory University STEM Research and Career Symposium*. Additionally, Armando was one of only eight students selected to give an oral presentation.

Armando Rua was also the winner of a *CUNY Doctoral Student Research Grant (DSRG)* and recognized as an honorable mention for the highly competitive *Ford Foundation Dissertation Fellowship*.

RISE Alumni

Steven Cajamarca (BA'13), Spring 2013 Commencement Salutatorian, was granted the *Jeff Wijnen Award* which is given annually by the Hunter College Dept. of Chemistry to an outstanding undergraduate. He is now in the Weill Cornell Tri-institutional MD/PhD program.

Dalila Ordoñez (BA'13) was the recipient of the Livingston Welch Research Award by the department of Psychology at Hunter College in recognition of her research excellence. She is now at Harvard University pursuing a PhD in Neuroscience.

Juan Gomez (PhD'12) was selected for the *Harold B. Amos Award for Outstanding Graduate Student* at Hunter College. Juan is currently Postdoctoral fellow at Oregon Health and Science University and was awarded a *Neuroscience 2013 Postdoctoral Fellow Travel Award* from the Society for Neuroscience.

Evelyn Ramirez (BA'11), currently at Queens College pursuing a PhD in Clinical Neuropsychology, was selected as an *Enhanced Chancellor's Fellow* and *Dean K Harrison Fellow*.

Judith Rosena (BA'11) is the recipient of several awards related to her training in the PhD program in Neuroscience at Meharry Medical College including: 2nd Place for a poster presentation during Student Research Day, Dean's List 2012-2013, Scholarship award from Meharry Donors Fund 2012, Scholarship from South Central Seventh Day Adventist Conference 2012, and Vanderbilt University Pharmacology training grant (T32) 2013.

Jenna Carter (BA'10) is the recipient of the *Clifford D. Clark Graduate Fellowship for Diversity* to support her graduate studies in the PhD program (Neuroscience) at Binghamton University.

Tracy Callender (BA'03) was awarded an *NIH IRACDA Postdoctoral Teaching Fellowship* to support her postdoctoral training at Stony Brook University.



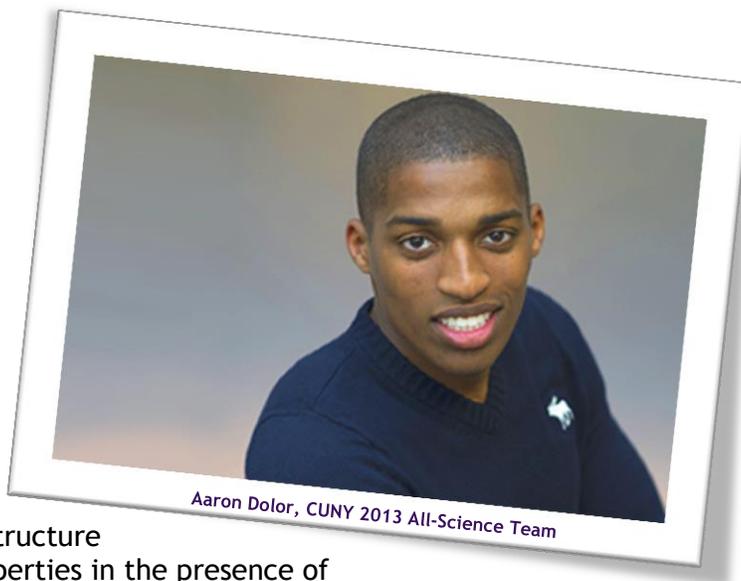
Juan Gomez: RISE PhD '12

Scholastic Achievements (continued)

RISE Alumnus is awarded an NSF Graduate Research Fellowship

Aaron Dolor (B.A. *magna cum laude* in biochemistry, minor in linguistics, 2012) was awarded a 2013 *National Science Foundation Graduate Research Fellowship*; the most prestigious award for graduate study in STEM. Aaron is currently a doctoral candidate at the University of California-San Francisco and was awarded this grant based on his proposed graduate research on zwitterionic fats. In recognition of receiving this NSF fellowship, Aaron was included on *CUNY's 2013 All-Star Science Team*.

As a RISE scholar at Hunter, Aaron worked under the mentorship of Dr. Charles Drain (Dept. of Chemistry) where he explored how the chemical structure porphyrins molecules related to their physical properties in the presence of radiation. For his academic and research excellence at Hunter, Aaron was named a 2012 Jonas E. Salk Award recipient; an award given to only eight CUNY graduates judged most likely to make significant contributions in medicine and medical research.



Aaron Dolor, CUNY 2013 All-Science Team

Student Spotlights

RISE UNDERGRADUATE STUDENT

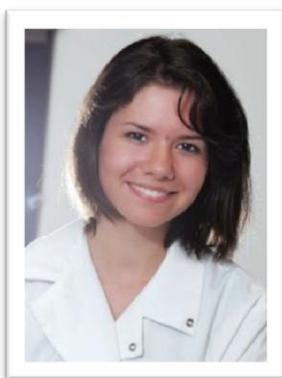
Elena Pires

Majors: Chemistry & Art

Research Mentor: Dr. Mandë Holford

What experiences led to your decision to pursue a PhD?

EP: As a child, I always possessed a strong sense of curiosity and imagination in regards to science and the world around me, but that interest did not come full circle until college where I was exposed to a lot of research and science occurring at Hunter. My first science class taken was general chemistry, and my professor in that class opened my eyes to the world of research and really sparked a great interest in me towards a career in that area. I was initially pre-med, discovered that it was not for me after a summer pre-med internship, and have never been more confident in aiming towards a PhD now.



What are the main questions of your mentor's laboratory at Hunter?

EP: Main questions of Dr. Holford's lab are as follows: Are there toxins excreted by marine snails that may serve as potential sources of drug treatment to humans? If so, how do they affect humans, and how can they be delivered to patients? My current project involves venom drug delivery via viral capsids which gives me the chance to learn how to utilize mass spectrometry and protein synthesis techniques.

How has the RISE program helped to prepare you for graduate school?

EP: The RISE program has helped prepare me for grad school by offering financial and educational support while gearing me for a PhD and career in biomedical research.

Valuable research experience, a salary, tuition waiver, an annual conference, tutoring, and graduate school campus tours are all included throughout the program.”

What connections can you make between your majors in Art and Chemistry?

EP: My majors in Art and Chemistry have both helped me towards my path towards a PhD. Both involve mastering communication as well as outside-of-the-box thinking. In both the science and art worlds, you must be able to explain your work clearly to your audience and utilize creative thinking to envision new innovations and advances. The chemistry major has given me the knowledge and enthusiasm towards science that I have always craved while the art major has helped me improve my creative thinking and visual communication of this knowledge (which comes handy when designing figures in papers to explain difficult concepts).

How has your summer research internship enhanced your undergraduate experience?

EP: Summer research away from my home institution has given me the chance to experience life as a researcher at a grad school of interest to me. My time at Cornell University this summer has opened my eyes to the research done there as well as the kinds of interaction and culture found on campus and around the area. It has allowed me to determine if the university, town, and lifestyle are a perfect fit for me and my future.

What are your long-term career goals?

EP: My long-term career goals involve running a laboratory doing research to expand science as well as practicing veterinary medicine. My dream is to discover links between animal health and human health, and a DVM-PhD is a present option that will aid me in this goal.

RISE GRADUATE STUDENT

Saranna Belgrave

Degree: Biopsychology

Mentor: Dr. Victoria Luine

What experiences led to your decision to pursue a PhD?

SB: As an undergraduate I had the opportunity to be a



research assistant in the spinal regeneration laboratory of Dr. Marie Filbin here at Hunter College. There I was mentored by a postdoctoral fellow, Dr. Rathna Chaudhry, who is the key individual who nurtured and enhanced my love of neuroscience. With her mentorship and training I was able to develop not only technical skills, but also how to critically think like a scientist. Dr. Chaudhry taught me to view the inevitable failures of research as an opportunity to learn how to solve a new problem. Most importantly, she believed in my capabilities, set very high expectations and demanded excellence. These foundations that Dr. Chaudhry instilled in me, gave me the confidence to pursue a career in science.

What is the main question of your thesis?

SB: I am conducting my graduate research under the mentorship of Dr. Victoria Luine whose work explores relationships between hormones and behavior. The main question of my thesis is: How does multi-parity (having multiple pregnancies and offspring) effect anxiety, memory and olfactory ability with age? We use a rodent model to compare these factors in females that have had varying numbers of litters. Our data suggests that the experience of multiple pregnancies along with bouts of pup rearing and care have positive long-term effects that can attenuate some of the negative effects of aging.

What advice would you give to students who want to pursue a PhD in Science?

SB:

- 1) Find a topic area or scientific question that you are passionate about. You need that passion to motivate you through the difficult process of getting the PhD.
- 2) Choose your mentor carefully. Having a mentor that supports you and also nurtures you as a young scientist is critical to you being prepared and confident in your field, not only during the time you are in graduate school, but also when you go out into the scientific community after your graduate work.
- 3) Be persistent!!! You will have successes and discoveries but also failures and frustrations. You will run into countless roadblocks but they are all part of what it means to do research. You must forge forward!

What are your long-term career goals?

SB: Ten years from now I see myself in a position where I can instill my passion for scientific inquiry to students at all levels. I also hope to be making strides in ameliorating the STEM performance deficits in the under-privileged New York City schools through the creation of new science enrichment programs. As a first step towards this goal, I am participating in the New York Academy of Sciences Afterschool STEM Mentoring Program which provides me with teaching skills and the opportunity to work directly with grade 4-8 public school students in underserved communities.

How has RISE program helped you make progress towards your career goals?

SB: The funding support including salary and travel to scientific meetings are essential aspects of my graduate training. However, it is the holistic view of a graduate student's needs that makes the RISE program more than just a funding source. The administration and staff view students as individuals and considers not only academic, but emotional barriers that can impede the success of underrepresented scientist-in-training. The career development workshops are an extremely valuable resource to build skills to overcome graduate school obstacles and planning for a successful career. RISE most definitely has given me a solid, supportive foundation in which to build upon my scientific career.

Resources for Students

These selected websites are great resources for STEM trainees to find information on various summer and graduate programs, career development and funding opportunities.

Just Garcia Hill-Recourses for minorities in science:

<http://justgarciahill.org>

The New York Academy of Sciences:

<http://www.nyas.org>

Pathways to Science-Search engine for opportunities in STEM:

<http://www.pathwaystoscience.org>

The Leadership Alliance-Summer Program Opportunities:

<http://www.theleadershipalliance.org>

Resources for prospective and current graduate students:

<http://www.phds.org/>

The National Postdoc Association:

<http://www.nationalpostdoc.org/>

Career Planning-Individual Development Plans (IDPs):

<http://myidp.sciencecareers.org>

Grants and Funding:

<http://sciencecareers.sciencemag.org/funding>

RISE on the Web



RISE students, alumni, mentors and program affiliates are welcome to join The RISE Program at Hunter College-LinkedIn Group. Requests to join can be made here: <http://bit.ly/riselinkedin>

RISE Website

For more information about our program please visit our new website: <http://rise.hunter.cuny.edu>

Apply to RISE through SciMON

The Science and Mathematics Opportunities Network helps support RISE and works to connect all students to research opportunities at Hunter College.



Learn more at: <http://www.hunter.cuny.edu/scimon>

Social media: @HunterSciMON



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